

# **MSC EVALUATION OF ALASKA COMMERCIAL SALMON FISHERIES**

## **PERFORMANCE INDICATORS AND SCORING GUIDEPOSTS**

Proposed by Scientific Certification Systems, Inc.  
28 February 2005

## **THE EVALUATION CRITERIA**

MSC has defined a set Principles and Criteria for Sustainable Fishing which is to be used as a standard for its fisheries evaluation and certification process. Recognizing the diversity of fisheries across the world, the MSC derived an evaluation methodology that would maintain the intent and rigor of its Principles and Criteria but allow enough flexibility in the application of the standard to permit scientists to make sound judgments about the sustainability of any given fishery regardless of differences in species composition, geographic location, oceanographic conditions, or fishing methods.

The flexibility in the MSC evaluation methodology is achieved in two ways: first, the scientists conducting an evaluation translate the MSC Principles and Criteria into a set of sub-criteria and performance indicators to provide appropriate and specific measures of performance for the fishery or fisheries being assessed. In addition, a set of "scoring guideposts" is provided to describe the basis by which fisheries will be measured against the indicators. Once the sub-criteria, indicators, and scoring guideposts are finalized, the evaluation team of scientists prioritizes and weights the sub-criteria and indicators to indicate the importance of each of the factors to the overall sustainability of the fishery or fisheries.

This document contains the proposed set of sub-criteria, indicators, and scoring guideposts for use in evaluating Alaska salmon fisheries. This set is proposed for use in assessing the Alaska salmon fisheries as it is based on the sets of performance indicators and scoring guideposts in use for assessing salmon fisheries in California (USA) and British Columbia (Canada).

Sets of subcriteria and performance indicators are provided under each of the three MSC Principles. Subcriteria are not used as specific measures of performance; they are more refined categories of inquiry under MSC Principles and Criteria. A fishery is only measured against individual performance indicators. Under the MSC assessment protocols, each indicator must receive a score between 0 and 100. Therefore, scoring guideposts are provided to illustrate what the assessment team will be looking for in assigning scores to an indicator.

Scoring guideposts labeled as '100' indicate the best performance achievable for an indicator. This is the highest mark any fishery could be expected to receive. The '80' scoring guidepost references the level of acceptable performance for an indicator; whereas, the '60' scoring guidepost indicates the minimal threshold allowable in an MSC evaluation. Indicator scores between 80 and 100 do not require any further action. A score between 60 and 80 for an indicator, points out that the evaluating scientists identified a minor deficiency that needs corrective action. An indicator score of 60 or lower indicates a major deficiency in the fishery that needs corrective action. The scoring guideposts used to rate an indicator are meant to be hierarchical in that to meet a particular score, the scoring guideposts of all lower scores should also have been met.

A fishery is considered to pass the MSC evaluation process and recommended for certification when it receives a weighted score of 80 or above on each of the three MSC Principles. For fisheries where the weighted score of each MSC Principle is 80 or above, but specific indicators achieve a score between 60 and 80, the fishery is considered to have passed the MSC evaluation

process but certification can only be awarded if the applicant fishery agrees in writing to correct the identified deficiencies specified by the evaluation team. In fisheries where given indicators score 60 or below, a fishery cannot pass the evaluation process and cannot be awarded certification until the major deficiency is corrected to the satisfaction of the evaluation team.

All sub-criteria and indicators are also weighted indicating their relative importance in setting the overall scores for the fishery. The weighting process will proceed after the evaluation team has received public comments on this draft and been able to incorporate the comments to create a final set of sub-criteria, indicators, and scoring guideposts for use in the evaluation process.

To facilitate the correct interpretation of the evaluation components drafted, we have also provided definitions (see Definitions section below) for most of the important terms commonly associated with the management of salmon fisheries. These terms are used to define the fisheries being evaluated, the evaluation sub-criteria and indicators, and the scoring guideposts. These definitions are again the same as those used in the evaluation of California and British Columbia salmon fisheries.

The key to understanding the criteria is to understand the differences between the MSC Principles. Principle 1 focuses on the target population, defined as target species or target stocks. Under this principle the fundamental building blocks for sound fisheries management are considered:

1. The definition of the target stocks;
2. The quality of monitoring and stock assessment programs;
3. The specific management goals for target stocks;
4. The procedures to facilitate the recovery of target stocks that are depleted; and
5. The fisheries are conducted in a manner that will not compromise the age, size and genetic structure of the target stocks.

Principle 2 focuses on the impact of the fishery on the ecosystem and non-target populations. Here we are assessing how the fishery management operations deal with:

1. The importance of maintaining a productive, functional and diverse ecosystem;
2. Provisions to minimize the fishery impacts on endangered, threatened, protected or icon species; and
3. Procedures for the recovery of depleted non-target stocks.

Principle 3 focuses on the management and operational framework that has been put in place to achieve the management goals. Some indicators under Principle 3 appear to overlap with indicators under Principles 1 and 2, however, the Principles 1 and 2 are concerned with the outcomes of a management system respecting the fact that the resources are maintained at the desired levels of abundance, while Principle 3 is concerned with evaluating whether all of the processes for reaching management objectives are in place. Components unique to Principle 3 include:

1. The evaluation of the consultation process;
2. The procedures used to control fisheries;

3. The extent of internal and external review of the management system;
4. The compliance with legal and administrative requirements; and
5. The implementation of responsible fishing practices.

The management of salmon fisheries has often been divided into five major components:

1. Resource inventory;
2. Pre-season planning;
3. In-season management (i.e. conducting the fisheries);
4. Post-season evaluations; and
5. Research and stock assessment.

Each of these components is covered by the proposed evaluation criteria. Criteria under Principles 1 and 2 address most of the issues associated with resource inventory and pre-season planning while Principle 3 criteria address in-season management and post-season evaluations. Issues associated with research and stock assessment are included under each of the three MSC Principles as they apply to target stocks, non-target stocks and the management of fisheries.

## DEFINITIONS

Managers and biologist use a wide variety of terms to describe the groups of fish they manage for specific fisheries. For the purpose of this evaluation we will use the following terms and definitions:

Bycatch – the harvest of non-target species or non-target stocks.

Enhanced stocks - stocks of salmon that have been directly augmented using artificial propagation techniques (e.g. hatcheries, in-stream incubators, spawning channels, hatchery out-planting).

Escapement – those mature salmon that are not harvested and thus may contribute to the spawning component of the stock.

Fisheries scientists outside the management system – this includes fisheries scientists that are not full-time employees of Alaska Department of Fish and Game but have demonstrated expertise related to the fisheries management or stock assessment issues in question. These could include professional scientists employed in the private sector, universities or other non-governmental organizations.

Harvest – those fish or other species that are caught and killed during a fishery or die as a direct result of fishing activity.

Indicator stock – a salmon stock for which detailed information is collected and used to manage a larger group of salmon stocks or stock management unit.

Limit Reference Point (LRP) - indicates the state of a fishery and/or a resource, which is not considered desirable. Fishery harvests should be stopped before reaching it. If a LRP is inadvertently reached, management action should severely curtail or stop fishery development, as appropriate, and corrective action should be taken. Stock rehabilitation programs should consider an LRP as a very minimum rebuilding target to be reached before the rebuilding measures are relaxed or the fishery is re-opened.

Majority – this could be a simple majority (e.g. >50% of the stocks in a stock management unit) or a numerical majority (e.g. >50% of the fish in a stock management unit or scientists in a region), where the management system has provided acceptable rationale for the definition used in their submission for each indicator.

Natural salmon stock – a naturally-spawning stock that includes spawners produced by hatcheries. This terminology is used to distinguish it from a “wild” or native stock that has not been influenced by artificial propagation.

Non-target species – species that are not the focus of the fishery but are caught in a fishery that is attempting to harvest other species.

Non-target stock – a stock of salmon that is not the focus of the fishery but is caught in a fishery that is attempting to harvest other salmon stocks.

Precautionary approach - A set of measures and actions, including future courses of action, which ensures prudent foresight, reduces or avoids risk to the resources, the environment, and the people, to the extent possible, taking explicitly into account existing uncertainties and the potential consequences of being wrong.

Productivity, related to ecological community or the ecosystem – the rate of biomass production per unit area per unit time.

Productivity, related to salmon – the number of salmon per spawner per unit of time (usually per year). A common measure of productivity for salmon is the number of recruits per spawner, where a fish is classified as a recruit if it survives to be harvested or escapes to a spawning area.

Reference points - A (management) reference point is an estimated value derived from an agreed scientific procedure and an agreed model to which corresponds a state of the resource and of the fishery and which can be used as a guide for fisheries management.

Risk - the possibility of suffering harm or loss; danger; a factor, thing, element, or course involving uncertain danger, a hazard. In decision theory “the degree of probability of loss. A statistical measure representing an average amount of opportunity loss.” This terminology is used “when large amounts of information are available on which to base estimates of likelihood, so that accurate statistical probabilities can be formulated”

Risk analysis - Any analysis of unknown chance events for purposes of effecting or evaluating decisions in terms of possible penalties and benefits attending these events. A method for generating different probability distributions with accompanying cost and benefits that may attend different courses of action.

Stock – meaning a group of salmon defined by its species, spawning location or spawning region, and in some cases run timing.

Stock management unit – meaning the stock or group of salmon stocks that are treated as a single unit when setting management goals or making fisheries management decisions.

Target Reference Point (TRP) - corresponds to the state of a fishery and/or a resource, which is considered desirable. Management action, whether during a fishery development or stock rebuilding process, should aim at maintaining the fishery system at its level.

Target species – the species of salmon that a specific fishery is attempting to harvest.

Target stocks – specific salmon stock or stock management unit that a specific fishery is attempting to harvest.

Uncertainty - The condition of being uncertain. Doubt. Something uncertain. In statistics, the estimated amount or percentage by which an observed or calculated value may differ from the true value. The incompleteness of knowledge about the states or processes in nature.

Wild stocks – stocks of salmon that have not been augmented through artificial propagation techniques (e.g. hatcheries, in-stream incubators, spawning channels, hatchery out-planting).

*(Adapted from FAO, 1995 The Precautionary Approach To Fisheries and its Implications for Fishery Research, Technology and Management: an updated review by S.M. Garcia, Fishery Resources Division, FAO Fisheries Department.)*

# SUB-CRITERIA, PERFORMANCE INDICATORS, AND SCORING GUIDEPOSTS FOR USE IN EVALUATING ALASKA SALMON FISHERIES

## MSC PRINCIPLE 1

**A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.**

### Intent:

The intent of this principle is to ensure that the productive capacities of resources are maintained at high levels and are not sacrificed in favor of short-term interests. Thus, exploited stocks would be maintained at high levels of abundance designed to retain their productivity, provide margins of safety for error and uncertainty, and restore and retain their capacities for yields over the long term.

### MSC Criterion 1.1

The fishery shall be conducted at catch levels that continually maintain the high productivity of the target population(s) and associated ecological community relative to its potential productivity.

Our interpretation of MSC Criterion 1: The performance indicators listed under Criterion 1 focused on the adequacy of the information used to manage the fisheries and stocks. For our assessment, we have organized the performance indicators into the three sub-criteria: 1) the definition of the stock units for each fishery; 2) the information available on the harvests, escapement, biological characteristic, and productivity; and 3) the management goals for each stock unit. As in the evaluations of other fisheries, the effect of the fishery on the associated ecological community will be primarily dealt with under Principle 2. However, the 100% level for indicators related to management goals under Principle 1 cannot be achieved unless information is collected on the associated ecological community and used in setting management goals.

*Subcriterion 1.1.1      Scientifically defensible stock units have been defined and the geographic distributions of these stocks are known.*

The intention of this sub-criterion is to evaluate whether the definition of the stock units are clear and appropriate for each species harvested in the fishery.

**Indicator 1.1.1.1:      The stock units are well defined for the purposes of conservation, fisheries management and stock assessment.**

### 100 Scoring Guidepost

- There is an unambiguous description of each stock unit, including: its geographic location, run timing, details on all the component stocks, and rationale for its definition.
- The rationale for each stock unit is clear with regard to conservation, fisheries management and stock assessment requirements.

### 80 Scoring Guidepost

- The stock units are well defined and include details on the major component stocks.
- The rationale for each stock unit for the target species is clear with regard to conservation, fisheries management and stock assessment requirements.

### 60 Scoring Guidepost

- The majority of stock units are defined.
- The rationale for the majority of stock units for the target species is clear with regard to conservation, fisheries management and stock assessment requirements.

**Indicator 1.1.1.2:** There is general scientific agreement that the stock units are appropriate.

### 100 Scoring Guidepost

- The stock units for target species have been reviewed and found to be scientifically defensible and appropriate by management authorities such as the National Marine Fisheries Service (NMFS), US Fish and Wildlife Service (USFW), and Alaska Department of Fish and Game (ADFG).
- There is general agreement among regional fisheries scientist outside the management system that the stock units are appropriate.
- There is general scientific agreement regarding the stock units for non-target species.

### 80 Scoring Guidepost

- There is general agreement among regional fisheries scientist within the management system that the stock units are appropriate for target species.
- There is no significant scientific disagreement regarding the stock units used by the management system to formulate management decision for the fishery.

### 60 Scoring Guidepost

- There is general agreement among regional fisheries scientist within the management system that the majority of stock units are appropriate for target species.

**Indicator 1.1.1.3:** The geographic range for harvest of each stock unit in the fishery is known.

#### 100 Scoring Guidepost

- The geographic range for harvests of each stock unit in the fishery is estimated and documented each year.
- The information on the geographic range of harvests is monitored during the fishing season and used when making in-season management decisions.

#### 80 Scoring Guidepost

- The geographic range for harvests of target stocks is defined.
- The information on the geographic range of the harvests of target stocks is monitored during the fishing season and is sufficient to prevent the over harvesting of these stocks.
- The information available on the geographic range for harvest of non-target stocks is sufficient to prevent the over harvesting of these stocks.

#### 60 Scoring Guidepost

- The information available on the geographic range for harvests of target or non-target stocks is sufficient to prevent the over harvesting for the majority of the stocks within each stock unit.

**Indicator 1.1.1.4:** Where indicator stocks are used as the primary source of information for making management decisions on a larger group of stocks in a region, the status of the indicator stocks reflects the status of other stocks within the management unit.

#### 100 Scoring Guidepost

- The status of the indicator stocks is well correlated with the stocks that are most at risk from a conservation point of view, not just correlated with the most productive stocks in the region.
- The indicator stocks used have been reviewed and found to be scientifically defensible and appropriate by management authorities such as the NMFS, USFW, and the ADFG.
- There is general agreement among regional fisheries scientists outside the management system that the indicator stocks are appropriate.
- The relationships between indicator stocks and stocks of interest are assessed every three to five years.

#### 80 Scoring Guidepost

- There is some evidence of coherence between the status of indicator stocks and the status of other stocks they represent within the management unit.

- There is no significant scientific disagreement regarding the indicator stocks used by the management system to formulate management decisions for the fishery.

#### 60 Scoring Guidepost

- There is no significant scientific disagreement regarding the indicator stocks used by the management system to formulate management decisions for the fishery.
- There is some scientific basis for the indicator stocks used in the management of the fishery.

**Indicator 1.1.1.5:** Where stock units are composed of significant numbers of fish from enhancement activities, the management system provides for (1) identification of the enhanced fish (e.g., hatchery fish) and (2) their harvest in such a way that they do not adversely impact the diversity, ecological function or viability of Wild (un-enhanced) stocks.

#### 100 Scoring Guidepost

- Fisheries targeting enhanced stocks are geographically removed from wild (un-enhanced) stocks and separate terminal harvest areas are established for these fisheries.
- Times and areas have been identified where the majority of enhanced fish migrate through the general fishery.
- There is real time mark recovery program during the prosecution of the fishery that allows determination of harvest rates of the targets and naturally enhanced component of the run and these data are used in regulation of the fishery.

#### 80 Scoring Guidepost

- In fisheries where both enhanced and wild (un-enhanced) stocks are harvested at the same time, the harvest guidelines are based on the goals and objectives established for the wild (un-enhanced) stocks, and there is sufficient information on stock composition (i.e. hatchery and natural fish) to determine whether those goals are met.
- There are adequate data and analyses to determine that the presence of enhanced fish in the management units does not adversely impact the wild (un-enhanced) fish stocks

#### 60 Scoring Guidepost

- There is general scientific agreement within the management system regarding the impacts of enhanced fish on the resultant harvest rates or escapements of wild (un-enhanced) fish stocks
- Managers have some scientific basis for assuring that harvest rates for enhanced stocks are not adversely affecting the majority of wild (un-enhanced) stocks within each stock unit.

*Subcriterion 1.1.2 The monitoring and assessment of fisheries and stocks is adequate for fisheries managers to maintain the high productivity of the target stocks and associated ecological community relative to its potential productivity.*

The foundation for the management of most salmon fisheries is information on fishery harvest and escapements. Long-term (>10 yrs) monitoring of specific stocks is generally required to compute estimates of productivity. For some target species, additional information on fish size and age is required. The relative importance of each type of information will vary across fisheries and the species harvested.

**Indicator 1.1.2.1: Estimates exist of the removals for each stock unit.**

100 Scoring Guidepost

- Catch estimates are available for all fisheries in U.S. waters that harvest the target and non-target stocks harvested in the fishery being evaluated.
- Mortality rates are available for the fish released or discarded during the fishery.
- Catch estimates are available for fisheries outside U.S. waters that harvest the stocks that are the target of the fishery being evaluated.
- Catch estimates are available for enhanced (e.g., hatchery) fish.

80 Scoring Guidepost

- Catch estimates are available for all target stocks harvested in the fishery.
- Catch estimates are available for non-target stocks where the catch of the non-target stock may represent a significant component of the harvest of that stock.
- Mechanisms exist to ensure accurate catch reporting and these mechanisms are evaluated at least once every 5 years.
- Catch estimates are available for enhanced (e.g., hatchery) fish.

60 Scoring Guidepost

- Catch estimates for the majority of target stocks are available.
- Catch estimates are available for non-target stocks where the catch of the non-target stocks may represent a significant component of that stock.
- Mechanisms exist to ensure accurate catch reporting and these mechanisms are evaluated at least once every 10 years.

**Indicator 1.1.2.2: Estimates exist of the spawning escapement for each stock unit.**

100 Scoring Guidepost

- Estimates are available for the annual escapement for each stock unit harvested in the fishery.
- In-season escapement data are collected for all stock units and used to regulate the fishery.

- Estimates are available for the annual escapement and natural spawning of enhanced (e.g., hatchery) fish.

#### 80 Scoring Guidepost

- Estimates are available for the annual escapement of each target stock harvested in the fishery.
- Fishery independent indicators of spawning abundance are available for the non-target species harvested in the fishery.
- In-season escapement data are collected for the target stocks and used to regulate the fishery.
- Estimates are available for the annual escapement and natural spawning of enhanced (e.g., hatchery) fish.

#### 60 Scoring Guidepost

- Escapement estimates for target stocks are available, where escapement estimates are necessary to protect the target stock from overexploitation.
- Fishery independent indicators of abundance are available for non-target stocks where the fishery harvests may represent a significant component of the harvest of that stock.
- Estimates are available for the annual escapement and natural spawning of enhanced (e.g., hatchery) fish.

**Indicator 1.1.2.3:**      **The age and size of catch and escapement have been considered, especially for the target stocks.**

#### 100 Scoring Guidepost

- Annual monitoring programs collect data on the age and size of the catch and escapement for target and non-target stocks where there is a clear scientific basis for collecting these data.

#### 80 Scoring Guidepost

- Periodic monitoring programs collect data on the age and size of the catch and escapement for target stocks, and for non-target stocks where the fishery harvests may represent a significant component of the harvest of those non-target stocks.
- There is a scientific basis for the frequency of the sampling program to collect age and size data where there is a clear scientific basis for collecting these data.

#### 60 Scoring Guidepost

- The information on age and size of catch and escapement is adequate, where there is general scientific agreement that these data are important to assess the status of the stocks or adjust fisheries management decisions For example: information on the age distribution of coho salmon harvests would not be considered important for stock assessment or fisheries management decisions whereas age information would be important for the assessment and

management related to most chinook fisheries. Monitoring programs should be in place to detect changes in the size of the fish harvested for each salmon species.

**Indicator 1.1.2.4:** The information collected from catch monitoring and stock assessment programs is used to compute productivity estimates for the target stocks and management guidelines for both target and non-target stocks.

#### 100 Scoring Guidepost

- Scientifically defensible productivity estimates (e.g. stock/recruitment relationships) have been derived for all target stocks and the relative productivity of non-target stocks is known.
- Risk assessment has been conducted to determine the impact of alternative harvest strategies on non-target stocks. The risk assessment should include an assessment of the uncertainties with estimates of stock productivity for the target stocks.

#### 80 Scoring Guidepost

- There is adequate information to identify the harvest and production strategies required to maintain the high productivity of the target stocks.
- There is adequate information to estimate the relative productivity of the non-target stocks where the fishery harvests may represent a significant component of those non-target stocks.
- The harvest limitations for target stocks take into consideration the impacts on non-target stocks and the uncertainty of the productivity for these stocks.

#### 60 Scoring Guidepost

- The available information and analyses are adequate to identify the harvest limitations and production strategies required to maintain the productivity of the majority of target stocks.
- The relative productivity of the non-target stocks is considered in the management strategy, where the fishery harvests may represent a significant component of those non-target stocks.

*Subcriterion 1.1.3 Management goals have been set and are appropriate to protect the stocks from decline to their Limit Reference Point or operationally equivalent undesirable low level of abundance.*

**Indicator 1.1.3.1:** Limit Reference Points or operational equivalents have been set and are appropriate to protect the stocks harvested in the fishery.

The Limit Reference Point (LRP) or operational equivalent set by the management system has been defined above as “the state of a fishery and/or a resource, which is not considered desirable. Fishery harvests should be stopped before reaching it. If a LRP is inadvertently reached, management action should severely curtail or stop the fishery, as appropriate, and corrective action should be taken. Stock rehabilitation programs should consider an LRP as a very minimum rebuilding target to be reached before the rebuilding measures are relaxed or the fishery is re-opened.”

### 100 Scoring Guidepost

- The Limit Reference Point for target species have been reviewed and found to be scientifically defensible and appropriate by management authorities such as the NMFS, USFW, and the ADFG.
- There is general agreement among regional fisheries scientist outside the management system that the LRP's are appropriate.
- There is general scientific agreement regarding the LRP's for non-target species.

### 80 Scoring Guidepost

- There is some scientific basis for the LRP's for target stocks and these LRP's are defined to protect the stocks harvested by the fisheries.
- There is no significant scientific disagreement regarding the LRP's used by the management system to formulate management decision for the fishery.

### 60 Scoring Guidepost

- There is general agreement among regional fisheries scientist within the management system that the LRP's or equivalent are appropriate to achieve the management goals for target stocks.

### Indicator 1.1.3.2: Target Reference Points or operational equivalents have been set.

The Target Reference Point (TRP) or operational equivalents set by the management system has been defined above as “the state of a fishery and/or a resource, which is considered desirable. Management action, whether during a fishery development or stock rebuilding process, should aim at maintaining the fishery system at its level.”

### 100 Scoring Guidepost

- The Target Reference Point (TRP) **or operational equivalents** for target species have been reviewed and found to be scientifically defensible and appropriate by management authorities such as the NMFS, USFW, and the ADFG.
- There is general agreement among regional fisheries scientist outside the management system that the TRP's **or operational equivalents** are appropriate.
- The TRP's **or operational equivalents** for the target stocks take into account variability in the productivity of each component of the target stock and productivity of non-target stocks.

### 80 Scoring Guidepost

- There is no significant scientific disagreement regarding the TRP's **or operational equivalents** used by the management system to formulate management decision for the fishery.

- The TRP's **or operational equivalents** for the target stocks take into account variability in the productivity of each component of the target stock and the productivity of non-target stocks.

#### 60 Scoring Guidepost

- There is general agreement among fisheries scientist within the management system that the TRP's or operational equivalents are appropriate for the target stocks.
- Target reference points have been defined for the majority of target stocks harvested in the fishery and these target reference points are not scientifically disputed.
- The management system has taken into account the relative productivity of non-target stocks when setting the TRP's **or operational equivalents** for the majority of target stocks.

#### MSC Criterion 1.2

Where the exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level consistent with the precautionary approach and the ability of the populations to produce long-term potential yields within a specified time frame.

Our interpretation of MSC Criterion 1.2: This criterion refers to “populations” where our indicators and evaluation criteria refer to stocks or stock units of natural origin. The evaluation under this criterion will assess the degree to which the management strategy is designed to keep targeted stocks from becoming depleted, and to promote recovery if they become depleted. Note that this has already been partially assessed under Subcriterion 1.1.3.

**Indicator 1.2.1:**        **There is a well-defined and effective strategy, and a specific recovery plan in place, to promote recovery of depleted target stock within reasonable time frames.**

#### 100 Scoring Guidepost

- There are comprehensive and pre-agreed responses to low stock size that utilize a range of management measures to ensure rapid recovery.
- Stocks are allowed to recover to the TRP before commercial fisheries are permitted that target these stocks.
- The management system does not use artificial propagation as a substitute for maintaining or recovering wild stocks.

#### 80 Scoring Guidepost

- In the event of severe depletion, recovery plans are developed and implemented to facilitate the recovery of the depleted stocks within 3 reproductive cycles.

- Stocks are allowed to recover to more than 150% of the LRP for abundance before any fisheries are permitted that target these stocks.

#### 60 Scoring Guidepost

- In the event of severe depletion, recovery plans are developed and implemented to facilitate the recovery of the depleted stocks within 5 reproductive cycles
- Stocks are allowed to recover to more than 125% of the LRP for abundance before any fisheries are permitted that target these stocks.

**Indicator 1.2.2:** Target stocks (of natural origin) are not depleted and recent stock sizes are assessed to be above appropriate limit reference points for the target stocks.

In contrast to Indicator 1.2.1, which evaluates the strategy for stock recovery, this indicator evaluates the current status of the target species or stocks, and the basis for being reasonably certain about their status. The Scoring Guideposts are arranged hierarchically, so that evaluation of the current status depends on the assessment, which in turn depends on data and knowledge about the stocks and the fishery

#### 100 Scoring Guidepost

- There is general agreement among regional fisheries scientist outside the management system that the methods of estimating escapements and exploitation rates for the target stocks are scientifically defensible.
- Management actions have reduced fishing as the target stocks approach the LRP and fisheries have only resulted in escapements that approach or are below the LRP escapement goal in one year in a period of the most recent 10 consecutive years, for any of the target stocks.

#### 80 Scoring Guidepost

- There is general agreement among regional fisheries scientist inside the management system that the methods of estimating escapements and exploitation rates for the target stocks are scientifically defensible.
- Management actions have reduced fishing as the target stocks approach the LRP and fisheries have only resulted in escapements that approach or are below the LRP escapement goal in one year in a period of the most recent 5 consecutive years, for any of the target stocks.

#### 60 Scoring Guidepost

- There is general agreement among regional fisheries scientist inside the management system that the methods of estimating escapements and exploitation rates for the majority of target stocks are scientifically defensible.

- Management actions have reduced fishing as the target stocks approach the LRP and fisheries have only resulted in escapements that approach or are below the LRP escapement goal in no more than two years in a period of the most recent 5 consecutive years, for the majority of the target stocks.

### MSC Criterion 1.3

Fishing is conducted in a manner that does not alter the age or genetic structure or sex composition to a degree that impairs reproductive capacity.

Our interpretation of MSC Criterion 1.3: The effects of fishing on the “reproductive capacity” of the target stocks have already been partially assessed under criterion 1.1 and 1.2. Criterion 1.3 considers specific concerns about impacts of fishing on age, size, sex and genetic structure of stocks. Because genetic structure is very difficult to determine in most exploited fish stocks, impacts on component stocks (i.e. the stocks that comprise a stock unit) are used as a proxy at the 80 scoring level. Also included in this indicator is an assessment of the management system’s ability to identify and manage the potential impact of enhanced stocks on wild (un-enhanced) stocks.

**Indicator 1.3.1:** Information on biological characteristics such as the age, size, sex and genetic structure of the target stocks is considered prior to making management decisions and management actions are consistent with maintaining healthy age, size, sex and genetic structure of the target stocks.

#### 100 Scoring Guidepost

- There is comprehensive knowledge of the effect of fishing on biological characteristics such as the age, size, sex and genetic structure of the target stocks and the impact of changes in these factors on the reproductive capacity of the target stocks.
- Management actions are consistent with maintaining healthy target stocks relative to biological characteristics such as age, size, sex and genetic structure of all target stocks.
- Enhanced fish are identified and managed as separate target stocks.

#### 80 Scoring Guidepost

- The knowledge of the effect of fishing on biological characteristics such as the age, size, sex and component stocks is adequate to detect threats to the reproductive capacity of the target stocks.
- Management actions are consistent with maintaining healthy target stocks relative to biological characteristics such as age, size, sex and genetic structure of all target stocks.
- The management system includes provisions to minimize any adverse impacts to the genetic structure of wild (un-enhanced) stocks that may be due to the enhancement of other stocks.

## 60 Scoring Guidepost

- The knowledge of the effect of fishing on the biological characteristics such as age, size, sex and component stocks is adequate to detect threats to the reproductive capacity of the majority of target stocks.
- Management actions are consistent with maintaining healthy target stocks relative to biological characteristics such as age, size, sex or genetic structure for the majority of target stocks.
- The management system includes provisions to minimize the major adverse impacts for the majority of wild (un-enhanced) stocks that may be due to the enhancement of other stocks.

## MSC PRINCIPLE 2

**Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.**

Intent: The intent of this principle is to minimize impacts of fisheries on ecosystems. The criteria and indicators developed are limited to the impacts of fishing operations and the response and effectiveness of the regulatory system to impacts external to the commercial fishing operations, such as other harvests, climate change, habitat degradation, and salmon hatchery operations. We acknowledge that forces other than commercial fishing may result in a fishery being unsustainable, and that these may be anthropogenic or natural forces. This certification process addresses the impact of commercial fishing on the harvested stocks and the ecosystem, and the response of fishers and managers to changes in external environmental factors.

### MSC Criterion 2.1

The fishery is conducted in a way that maintains natural functional relationships among species and should not lead to trophic cascades or ecosystem state changes.

Intent

Assessment of this MSC criterion is based on indicators that reflect impacts on marine systems (bycatch and biomass removal) and on freshwater systems (adequacy of escapements in maintaining the ecosystem and integrity of watersheds). These indicators involve: 1) adequacy of management plans, data collection and monitoring of by-catch in marine fisheries and evaluation of potential fishing effects on the marine ecosystem; and 2) adequacy of escapement objectives to address the freshwater ecosystem concerns. The degree to which the information is collected in the management of the fisheries under Principle 1 will apply for determining if this criterion is adequately addressed and will influence the evaluation scores.

**Indicator 2.1.1: The management plan for prosecuting fisheries provides high confidence that direct impacts on non-target species are identified.**

The intent of this measure is to ensure that the management plans for the fisheries require collection of adequate data to address direct impacts of fishing on non-target species, including birds and marine mammals.

100 Scoring Guidepost

- A monitoring program exists that provides estimates of bycatch that meet statistical criteria acceptable to external reviewers.
- All historic monitoring data is readily available to stakeholder groups and external reviewers.
- Quantities of gear lost are recorded, and the impacts of lost gear on target and non-target species have been researched and accurate projections of impacts have been completed.

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- A program has been implemented to search for and remove derelict fishing gear.

#### 80 Scoring Guidepost

- A monitoring program exists that provides estimates of bycatch.
- In known problem areas of high bycatch, there is an ongoing monitoring program.
- A program has been implemented to remove lost fishing gear.

#### 60 Scoring Guidepost

- Data on bycatch in the majority of the fisheries are available to determine impacts on non-target species.

**Indicator 2.1.2      The management system includes measures to reduce marine ecosystem impacts.**

For salmon fisheries, the primary concerns related to marine ecosystem impacts are related to the bycatch of non-salmon species and the ecosystem impacts of removing of large numbers of the target salmon species.

#### 100 Scoring Guidepost

- A risk assessment of bycatch concerns has been conducted as part of developing the management plan.
- The effect of the fishery on the marine ecosystem has been explicitly considered in the management plan.
- Research has been conducted on marine piscivores that utilize the target species to ensure that commercial harvests do not present significant risks to the populations of these piscivores.
- Where conflicts exist between the harvest of fish and ecosystem concerns stemming from salmon removal, the balance achieved has been the subject of an open review by stakeholders.
- This information is presented in documents that are made available to stakeholders.

#### 80 Scoring Guidepost

- The effect of the fishery on the marine ecosystem has been addressed by the management system.
- Where problems are identified, fisheries managers make adjustments to reduce impacts on non-target species.
- Where conflicts exist between the harvest of fish and ecosystem concerns stemming from salmon removal, the balance achieved has been made known to stakeholders through publicly available information sources.

#### 60 Scoring Guidepost

- The management system does include measures to reduce marine ecosystem impacts to achieve management objectives.
- The management system has a history of responding to bycatch mortality problems and has procedures that are followed to limit bycatch.

**Indicator 2.1.3**      **Research efforts are ongoing to identify and evaluate the magnitude of ecosystem problems, and fisheries managers have a process to incorporate this understanding into their management decisions.**

The intent of this measure is to ensure that a research program has been established to evaluate historic and new data to identify future and ongoing problems. It is also necessary to have an established management process that will ensure research conclusions can quickly be transparently incorporated into future management activities associated with prosecuting the fishery.

#### 100 Scoring Guidepost

- There is detailed knowledge of the relationship between the fishery and impacts to the marine ecosystem or ongoing research is attempting to identify if such problems exist.
- There is detailed knowledge of the relationship between salmon production and climate trends and such information is rapidly and effectively incorporated into harvest management plans so that stocks are not over harvested.
- The management system has a proven history of incorporating new research findings into management plans.
- The management system has a proven history of closing fisheries when bycatch mortality problems arise.
- The management system has supported the development of more selective fishing practices.

#### 80 Scoring Guidepost

- There is ongoing research of previously identified problem areas to determine if bycatch reduction measures or other measures are effective.
- The management system recognizes effects of climate change on salmon production and has a documented record of incorporating such information when developing harvest plans so that stocks are not over harvested.
- When new problems are identified, the management plans require a new monitoring program be instituted to determine the effectiveness of new measures.
- The management plan allows for between season assessment and institution of new controls on the fishery or stakeholder consultation following the identification of bycatch problems or ecosystem related impacts.
- The management system has a proven history of successfully arbitrating stakeholder concerns when balance between fish harvests and ecosystem concerns have arisen.

#### 60 Scoring Guidepost

- The management system collects or plans to collect data on bycatch problems or ecosystem concerns.
- The management system recognizes effects of climate change on salmon production and has attempted to incorporate new information when developing harvest plans.
- There are procedures established to incorporate any knowledge obtained about bycatch problems into management actions.
- The management system responds to data provided on bycatch problems by entities outside of their agency.

**Indicator 2.1.4**      **The management system supports research efforts to understand the adequacy of existing escapement goals for meeting freshwater ecosystem needs.**

The intent of this indicator is to encourage the collection of information and data that can be used to address freshwater ecosystem concerns. It is our intent that future reviews of Pacific Salmon certification demonstrate that the information developed from these research programs on ecosystem requirements, such as aquatic system nutrient requirements and piscivore food requirements are incorporated into the management system.

#### 100 Scoring Guidepost

- There is research to determine tradeoffs of salmon harvests with ecosystem concerns, i.e., effects of removing salmon carcasses on the aquatic community including mammals, birds, and other fishes.
- Results and conclusions from research are made available to stakeholders.

#### 80 Scoring Guidepost

- Ongoing research is supported to determine the impacts of salmon carcasses on freshwater ecosystem processes and to identify tradeoffs between harvests and freshwater ecosystem concerns.
- The management system provides for the communication of research results to managers so that the results can be used in the development of escapement goals for meeting freshwater ecosystem needs.

#### 60 Scoring Guidepost

- The management system supports research efforts to understand the adequacy of existing escapement goals for meeting freshwater ecosystem needs.

**Indicator 2.1.5**      The management system supports research efforts to understand impacts of habitat degradation caused by non-fishing activities (e.g., water removal, water quality, timber harvests, agriculture, etc.) on salmon production and incorporates this information into harvest management plans and escapement goals.

The intent of this indicator is to encourage the collection of data in freshwater and estuarine habitats that can be used to evaluate changes in salmon survival and the capacity of the habitat to support salmon so that changes in harvests or escapement goals can be made, if necessary, to sustain natural populations.

#### 100 Scoring Guidepost

- Management has research program to evaluate effects of habitat degradation, including cumulative effects of smaller impacts, on natural salmon productivity and capacity.
- Management has a track record for implementing research findings to minimize or mitigate impacts of habitat degradation.
- Results and conclusions from research are made available to stakeholders and findings of lost production are used to re-evaluate harvest plans and escapement goals, if necessary.

#### 80 Scoring Guidepost

- Management has some research to evaluate effects of major habitat degradation on natural salmon productivity and capacity, though quantitative estimates not always available.
- Management has track record for attempting to minimize or mitigate impacts of habitat degradation.
- Results and conclusions from research are made available to stakeholders and there are on-going efforts to incorporate this information when developing harvest plans and escapement goals, if necessary.

#### 60 Scoring Guidepost

- There is some information on the effects of habitat degradation on natural salmon productivity and capacity and the general magnitude of impacts is known.
- Management attempts to minimize or mitigate impacts of some habitat degradation.
- Habitat degradation is considered when developing harvest plans and escapement goals, if necessary.

#### [MSC Criterion 2.2](#)

The fishery is conducted in a manner that does not threaten biological diversity at the genetic, species or population levels and avoids or minimizes mortality of, or injuries to endangered, threatened or protected species.

## Intent

This criterion focuses on direct mortality of the prosecuted fisheries on non-target species and the adequacy of the management units of the target species to ensure significant sub-components of the target species are adequately protected to provide for a reasonable expectation of sustainability of these components and their contribution to the genetic diversity of the target population. The impacted species of concern include protected species and icon species, such as marine mammals, bears, coastal wolves, and eagles, are adequately protected from direct or indirect impacts of the fisheries (we define icon species as any species of particular public interest that does not qualify under the terms ‘endangered, threatened, or protected’). These impacts may be identified at the population and community level. We also address the issue of harvests of salmon stocks that have been created or enhanced through fisheries enhancement activities, such as salmon hatcheries and spawning channels. The goal is to ensure that the production or harvest of enhanced stocks does not affect the sustainability of natural spawning stocks by adversely impacting the genetic structure or productivity of the natural salmon. The enhanced component of salmon stocks are assumed to be addressed as separate stocks using the indicators and guidelines listed.

**Indicator 2.2.1**      **The management system of the fishery includes provisions for integrating and synthesizing scientific information on biological diversity at the genetic, species or population level of all species harvested in the fishery and evaluating impacts on endangered, threatened, protected or icon species.**

The intent of this measure is to ensure that the management system incorporates available knowledge and considers the impacts of the fishery on biodiversity issues. This indicator includes the impacts of enhanced fishery harvests on these issues.

### 100 Scoring Guidepost

- A risk assessment has been conducted, based on current knowledge of direct and incidental mortalities from the fishery, to ensure the fishery does not pose a significant threat to the biodiversity of the target or non-target species.
- Stock composition of harvests is known and the likelihood of harvest of endangered, threatened, protected, or icon species has been estimated.
- Time and area of migrations of weak year classes, sub-stock or population components are known.
- The management system contains provisions to reduce harvests based on biodiversity concerns of affected endangered, threatened, protected or icon species, or weak year classes of targeted stocks.

### 80 Scoring Guidepost

- The fishery has been monitored and the removals are assessed with a special effort to determine presence of rare, endangered, protected, or icon species.

- The management system has a history of incorporating new research into management as new research data on impacts of fisheries on biodiversity become available.
- The fisheries management system includes provisions for harvest reduction when biodiversity concerns are identified for target or non-target species.

#### 60 Scoring Guidepost

- Efforts are being made to assess the impacts of the fishery on the biodiversity of the endangered, threatened, and protected or icon species.
- The impact of the fishery on endangered, threatened, and protected or icon species is identified and is considered in the management of fisheries.
- There are provisions in the management system to reduce the impacts of the fishery on the biodiversity of the endangered, threatened, and protected or icon species.

**Indicator 2.2.5**      **Salmon hatcheries are managed in order to minimize impacts on the genetic diversity and productivity of targeted natural salmon stocks and non-targeted salmon populations, including those listed as threatened or endangered.**

The intent of this measure is to ensure that hatchery practices are adequate to maintain genetic diversity and productivity of natural spawning populations of salmon.

#### 100 Scoring Guidepost

- Hatchery programs (state, federal, tribal, local) have undergone a formal peer review process that evaluated hatchery practices for their ability to minimize hatchery effects on natural spawning salmon populations caused by interbreeding between hatchery and natural salmon, competition for food and space (juveniles and adults), and predation by juvenile hatchery salmon on natural salmon fry.
- Effects of hatchery interactions with natural salmon have been investigated and documented in the watersheds. Stocks outside the watershed are not utilized in the hatcheries.
- Recommendations of the peer review process have been implemented by the hatcheries and interactions are minimal.

#### 80 Scoring Guidepost

- Hatchery programs (state, federal, tribal, local) have undergone an internal review process that evaluated hatchery practices for their ability to minimize hatchery effects on natural spawning salmon populations caused by interbreeding between hatchery and natural salmon, competition for food and space (juveniles and adults), and predation by juvenile hatchery salmon on natural salmon fry.
- Effects of hatchery interactions with natural salmon have been investigated and documented in most watersheds. Stocks outside the watershed are not utilized in the hatcheries.
- Recommendations of the review have been implemented by the hatcheries and interactions are mostly minimal.

## 60 Scoring Guidepost

- Hatchery programs (state, federal, tribal, local) follow general guidelines to minimize effects on natural spawning salmon populations caused by interbreeding between hatchery and natural salmon, competition for food and space (juveniles and adults), and predation by juvenile hatchery salmon on natural salmon fry.
- Effects of hatchery interactions with natural salmon are generally known in most watersheds. Stocks outside the watershed are not utilized in the hatcheries.
- Attempts have been made to minimize adverse interactions between hatchery and natural salmon.

### MSC Criterion 2.3

Where exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level within specified time frames, consistent with the precautionary approach and considering the ability of the population to produce long-term potential yields.

#### Intent

Are reductions in fish abundance caused by human activity, unrelated to the directed harvest, considered in the management plan and in the establishment of escapement goals? If so, is the management system sufficiently robust to accommodate the long term recovery of depleted populations and ensure that directed or by-catch harvests, including harvests of hatchery salmon, do not present significant risks to the long term sustainability of naturally-produced salmon populations?

**Indicator 2.3.1**      **Management strategies include provision for restrictions to the fishery to enable recovery of non-target stocks to levels substantially above established LRPs (Limit Reference Points)**

## 100 Scoring Guidepost

- The management plans and escapement goals have been shown to have a high (>80%) probability of achieving a long-term recovery of depleted non-target stocks using risk analysis.
- Historic data have been thoroughly examined to ensure fisheries restoration objectives are based on the likely habitat capacity, rather than on trends that cover only the most recent decades, thus avoiding the “moving baseline” syndrome.
- Monitoring and assessment programs are established to determine with a high degree of confidence and in a timely manner that recovery is occurring.
- Proposed management strategies have been reviewed and found to be scientifically defensible and appropriate by ADF&G, USFW, and NMFS.

- The management system supports the collection of data on non-fishing related human activity in the development of recovery plans for non-target stocks.

#### 80 Scoring Guidepost

- The management system includes assessment of plans for the recovery of non-target stocks to levels substantially above established LRPs.
- Objectives for recovery have at least some consideration of historic documents on stock abundance.
- The management system has a reasonable (>60%) probability of achieving long-term recovery of depleted non-target stocks.
- Monitoring and assessment programs are established to determine with a high degree of confidence and in a timely manner that recovery is occurring.
- Escapement goals will be revised periodically to accommodate new data indicating success or failure of existing recovery plans.
- The management system considers the impact of non-fishing related human activity in the development of recovery plans for non-target stocks

#### 60 Scoring Guidepost

- The management system attempts to prevent extirpation of non-target stocks and does have rebuilding strategies for the majority of the stocks.
- The management system has at least a 50% probability of achieving long-term recovery of depleted non-target stocks.
- The management system has a strategy for periodic revisiting escapement goals to respond to new data on recovery success or failure for the majority of the stocks.

## MSC PRINCIPLE 3

**The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.**

MSC Intent: The intent of this principle is to ensure that there is an institutional and operational framework for implementing Principles 1 and 2, appropriate to the size and scale of the fishery.

For the purposes of this section, the management system is defined to mean all public sector entities with responsibility for managing salmon in Alaska and includes ADF&G, NMFS, and USFW.

Some indicators under Principle 3 appear to overlap with indicators under Principles 1 and 2, however, Principles 1 and 2 are concerned with the outcomes of a management system respecting the fact that the resources are maintained at the desired levels of abundance, while Principle 3 is concerned with evaluating whether all of the processes for reaching management objectives are in place.

### Management System Criteria

#### MSC Criterion 3.1

The management system has a strategy for management that clearly defines long-term objectives for managing the impact of fishing on target species, non-target species and the ecosystem; the objectives are consistent with a well- managed fishery and MSC principles and criteria; and the management strategy includes provision for the effective implementation of measures to attain these objectives.

Intent:

The objective regarding this criterion dealing with Management Systems is to compare the management as implemented by ADF&G, NMFS and USFW with the standards for a well-managed fishery as defined in the MSC Principles and Criteria for Sustainable Fishing. Particularly important is whether the management system has clearly defined objectives and goals that incorporate currently evolving standards for responsible fisheries management with respect to conservation of the species, regard for the ecosystem to which they belong, transparency of the management process and recognition of the impact of the fishery on social, cultural and economic issues.

Throughout this section the term “impact on the ecosystem” is taken to mean the degree to which fishing alters the ecosystem relative to its non-fished state.

**Indicator 3.1.1:**        **The management system has a clear and defensible set of objectives for the harvest and escapement for target species and accounts for the non-**

target species captured in association with, or as a consequence of, fishing for target species.

#### 100 Scoring Guidepost

- Management objectives are clearly defined for all of the target stocks and are consistent with the MSC criteria for a well-managed fishery.
- Harvest rates and escapement goals are precisely set for each target stock unit in the fishery, as qualified by relevant environmental factors.
- Target Reference Points and Limit Reference Points for the natural stock are clearly defined and documented for each target stock unit in the fishery.
- Harvest controls are effective with respect to the attainment of management objectives for each target stock unit in the fishery.
- The management system provides estimates for all catches, landings and bycatch in a timely manner.

#### 80 Scoring Guidepost

- Management objectives are clearly defined for most of the target stocks and are consistent with the MSC criteria for a well-managed fishery.
- Target Reference Points and Limit Reference Points for the natural stock are clearly defined and documented for each target stock unit in the fishery.
- Harvest rates and escapement goals are set for target stocks or target species in the fishery, as qualified by relevant environmental factors.
- Harvest controls are precise and effective for major target stocks or target species in the fishery.
- The management system provides estimates for all major catches, landings, and bycatch in a timely manner

#### 60 Scoring Guidepost

- Management objectives are clearly defined and consistent with MSC criteria for a well-managed fishery for the majority of target stocks.
- Harvest controls are effective for the majority of the fisheries on target stocks.

- The management system provides for the estimation of catch, landing, and bycatch for the majority of the fisheries.

**Indicator 3.1.2:**        **The management system provides for periodic assessment of the biological status of the target species and the impact of fishing.**

100 Scoring Guidepost

- There is an annual assessment or update of the status of stocks for each major target stock unit in the fishery.
- When results of the assessments or updates indicate that there has been a substantial change in the status of the stocks, this new information is made available to stakeholders in conjunction with the implementation of changes to management measures.
- Reports on the methodologies used for the assessments are published on a regular basis in peer-reviewed journals and/or reviewed by authorities outside those responsible for Alaska salmon.

80 Scoring Guidepost

- Assessments or updates of the status of the stocks for the major target stock units are made on a periodic basis, dependent upon the level of exploitation.
- Results of assessment and updates of the status of the stocks are made available to stakeholders in a timely fashion.
- Reports on the methodologies used for the assessments are published in non-peer reviewed reports, and reviewed by the management authorities.

60 Scoring Guidepost

- Assessments or updates of the status of the stocks for the majority of the target species are made for major fishing regions within the fishery.
- Results of assessment or updates of the status of the stocks are made available to stakeholders.
- Technical analysis and methodologies used for the assessments are published or distributed to stakeholders. .

**Indicator 3.1.3:**        **The management system includes a mechanism to identify and manage the impact of fishing on the ecosystem.**

### 100 Scoring Guidepost

- Monitoring systems are in place to detect the impact of fishing on the ecosystem.
- Where potential impacts of fishing on the ecosystem have been identified, the management system has clear and well-defined objectives for evaluating and managing the impact of the fishery on the ecosystem.
- Control mechanisms are used to minimize impacts of fishing on the ecosystem.
- There is sufficient evidence to indicate that when used, control mechanisms are adequate for meeting the management objectives.

### 80 Scoring Guidepost

- The management system includes mechanisms to identify and evaluate the impact of fishing on the ecosystem.
- Control mechanisms are used to minimize impacts of fishing on the ecosystem.

### 60 Scoring Guidepost

- The management system takes measures to control the impacts of the fishery on the ecosystem in the majority of cases where impacts have been verified.

**Indicator 3.1.4:**      **When dealing with uncertainty, the management system provides for utilizing the best scientific information available to manage the fishery, while employing a precautionary approach.**

Uncertainty always exists in estimates of the status of a stock, and technically it is not generally possible to determine the accuracy of the assessments. This uncertainty results from sampling and measurement error, limited understanding of the biology of the fish being modeled, error in model assumptions, and an inability to model all of the important processes that affect the dynamics of the stock. It can also arise as a result of changing fishing technology. However, some idea of the uncertainty can be detected or measured through sampling theory, by lack of fit of the model being used, or by sensitivity analysis.

### 100 Scoring Guidepost

- The management system provides for the routine assessment of the level of uncertainty in the information collected for management and establishes management controls to address these uncertainties using the best available scientific information and a precautionary approach. .
- The management system implements research efforts to address data gaps.

- For newly developing fisheries for which there is very limited data and information, the management system implements controls on the development of the fishery that are precautionary in nature.
- The management system always quantitatively evaluates the effect of implementation uncertainty (the tendency for actual harvest rates or escapements to differ from those intended by the management regulations) on the effectiveness of the proposed management actions.

#### 80 Scoring Guidepost

- The management system provides for some assessment of the level of uncertainty in the information collected for management and establishes management controls which take into account these uncertainties, using the best available scientific information and a precautionary approach.
- In situations when precautionary measures are necessary to manage the fishery, the management system calls for increasing research efforts in order to fill data and information gaps.
- In most cases where there are newly developing fisheries, the management system implements controls on the development of the fishery that are precautionary in nature.
- The management system considers the effect of implementation uncertainty on the effectiveness of most of the proposed management actions.

#### 60 Scoring Guidepost

- The management system for the majority of newly developing fisheries is consistent with a precautionary approach.
- The management system considers the effect of implementation uncertainty on the effectiveness of the majority of the proposed management actions.

**Indicator 3.1.5: Management response to new information on the fishery and the fish populations is timely and adaptive.**

Intent: The management system should be timely and adaptive i.e., new information used by the management system to initiate new management measures or to update and/or improve current management measures in a timely fashion, because characteristics of the fishery can change and/or the natural system can show reduced or increased productivity over time.

#### 100 Scoring Guidepost

- The management system provides a mechanism for rapid adjustments to be made to its management programs.
- When new information or findings support altering the management and conservation programs (such as stock recovery plans), there is evidence to demonstrate that such adjustments are made within 6 months of obtaining the new information.

#### 80 Scoring Guidepost

- The management system provides a mechanism for responding to unexpected changes in the fishery.
- When new information or findings support altering the management and conservation programs, adjustments are made within 12 months of obtaining the new information.

#### 60 Scoring Guidepost

- For the majority of cases there are provisions for making timely adjustments to the management program, and when they are made the lag time is not so great as to result in the adjustments being ineffectual.

**Indicator 3.1.6:**        **The management system provides a process for considering the social and economic impacts of the fishery.**

#### 100 Scoring Guidepost

- There exists a formal and well-defined process to consider, over the short and long term, the views, customs, and interests of indigenous peoples who depend on fishing for their food or livelihood.
- There is a formal and well-defined process to consider, over the short and long term, the impact of the fishery on coastal communities that are closely tied to the fishery.
- There are no direct subsidies to the fishing industry.
- The management system regularly seeks and considers input from stakeholders in an effort to understand and address socioeconomic issues related to the fishery.

#### 80 Scoring Guidepost

- The management system regularly undertakes to consider the views, customs and interests of indigenous peoples whose livelihood or food are dependent on the fishery.
- The management system regularly takes into consideration the impact of the fishery on coastal communities that are closely tied to the fishery.

- There are no subsidies to the fishing industry that would lead to unsustainable fishing or ecosystem degradation.
- The management system regularly undertakes measures to understand the socioeconomic impacts resulting from the management of the fishery.

#### 60 Scoring Guidepost

- The management system more often than not considers the views, customs, and interests of indigenous peoples who depend on fishing for a livelihood or food.
- More often than not the management system considers the impact of the fishery on coastal communities that are closely tied to the fishery.
- For the majority of the fisheries there are no subsidies that threaten sustainable fishing.
- More often than not, the input of stakeholders is sought by the management system.

**Indicator 3.1.7:**        **The management system provides decision makers with useful and relevant information and advice for managing the fishery.**

#### 100 Scoring Guidepost

- The management system provides decision makers with a range of alternatives for achieving the objectives of management, including risk assessments for each alternative.
- All management decisions are based on useful and relevant information and advice that is provided through the management system.
- The management system, whenever possible, provides information to decision makers within a time frame that permits management controls to be determined before they need to be taken.

#### 80 Scoring Guidepost

- The management system provides managers with a range of alternatives for management.
- Management decisions consistently rely on useful and relevant information provided within the system and there is not a record of decisions going against the information provided.

#### 60 Scoring Guidepost

- The majority of management decisions rely on data, useful and relevant information, or advice provided through the management system.

- Risk assessments are considered in formulating important management decisions.

**Indicator 3.1.8:**        **The management system provides for socioeconomic incentives for sustainable fishing.**

#### 100 Scoring Guidepost

- The management system has formal procedure for providing social and economic incentives to stakeholders in the fishery to develop and utilize sustainable fishing practices, particularly the development of selective fishing gear and practices that lead to improved conservation.
- The management system creates strong incentives for harvesters to not exceed target catches or exploitation rates
- The stakeholders in the fishery regularly avail themselves of the opportunity to utilize these incentives.
- Evidence provided by the management system demonstrates that such incentives have contributed to improved conservation.
- The management system continually attempts to understand the impact of their decisions on social and economic factors affecting the stakeholders in the fishery and regularly takes action to mitigate the impacts on stakeholders.

#### 80 Scoring Guidepost

- The management system regularly considers the use of social and economic incentives to the stakeholders in the fishery, which are designed to facilitate the development of fishing gear and practices that can lead to sustainable fishing.
- The management system includes a program to create incentives for harvesters to not exceed target catches or exploitation rates.
- Evidence demonstrates that the stakeholders in the fishery have used such incentives.
- The management system attempts to understand the impact of their management decisions on social and economic factors affecting the major stakeholders in the fishery and takes action to lessen the major impacts on stakeholders.

#### 60 Scoring Guidepost

- The management system provides for the use of social or economic incentives to ensure sustainable fishing.

- The management system attempts to understand the impact of its decisions on social and economic factors affecting the stakeholders in the fishery and is responsive to requests to reduce these impacts.

**Indicator 3.1.9 The management system has taken significant steps to protect salmon habitat including water diversion and agricultural practices.**

100 Scoring Guidepost

- The management agencies have regulatory authority for protection of fish habitat
- The management agencies have a proven track record for protection of fish habitat.

80 Scoring Guidepost

- The management agencies participate in all regulatory decisions that may affect fish habitat and have a proven track record for protection of fish habitat.

60 Scoring Guidepost

- The management agencies provide information on all activities that may affect fish habitat and can demonstrate that this information has proved successful in protecting fish habitat.

**Indicator 3.1.10 The hatcheries use management practices and protocols that sustain the genetic structure and productivity of the natural spawning population and there is coordination between hatchery programs from different agencies/operators.**

100 Scoring Guidepost

- The management agencies have a peer reviewed written plan that establishes protocol for all hatchery programs with respect to practices that sustain the genetic structure and productivity of the natural stocks.
- The hatcheries mark all production with coded-wire-tags (CWTs) or other suitable marks such that reliable and meaningful estimates of hatchery composition of the catch and escapement can be computed.

80 Scoring Guidepost

- The management agencies have an agreement that establishes protocol for all hatchery programs with respect to practices that sustain the genetic structure and productivity of the natural stocks.
- The hatcheries mark all production with coded-wire-tags (CWTs) or other suitable marks such that reliable and meaningful estimates of hatchery composition of the catch and escapement can be computed.

## 60 Scoring Guidepost

- All hatchery programs employ practices that do not negatively affect the genetic structure and productivity of the natural stocks.
- The hatcheries mark the majority of production with coded-wire-tags (CWTs) or other suitable marks such that the presence and/or absence of hatchery produced fish can be detected in the catch and escapement.

### MSC Criterion 3.2

The management system allows for incorporation of relevant research findings.

Under this criterion we are interested in evaluating whether there is a research component to the management system that is sufficiently broad in scope to include all target species and other components of the ecosystem that may be impacted by fishing, and which provides for the acquisition of information and data to support scientifically- sound management actions, and whether the research is timely, open to review by peers and stakeholders in general, and is adequately funded.

**Indicator 3.2.1:**      The research plan covers the scope of the fishery, includes all target species, accounts for the non-target species captured in association with, or as a consequence of fishing for target species, and considers the impact of fishing on the ecosystem and socioeconomic factors affected by the management program.

## 100 Scoring Guidepost

- The management system incorporates a research component that considers relevant data and information needs for formulating management strategies for all target species, and also information leading to an understanding of the dynamics of the ecosystem including data on the catch, landings and discards of non-target species.
- The framework for research includes investigations dealing with socioeconomic impacts of the fishery.
- The research plan responds in a timely fashion to unexpected changes in the fishery.
- Funding is secure and sufficient to meet long-term research needs.
- There is significant continuing progress in understanding the impact of the fishery on target and non-target species, and the ecosystem in general.

- Research results form the basis for formulating management strategies and decisions.
- Research is regularly published in peer review journals and/or is reviewed by the management authorities.

#### 80 Scoring Guidepost

- The management system incorporates a research component that provides for the collection and analysis of information necessary for formulating management strategies and decisions for both target and non-target species.
- The research plan addresses concerns related to the impact of the fishery on the ecosystem.
- The research plan addresses socioeconomic issues that result from the implementation of management.
- The research plan is responsive to changes in the fishery.
- Funding is adequate to support short-term research needs.
- There is progress in understanding the impact of the fishery on target and non-target species.
- Research results are utilized in forming management strategies.
- Research is reviewed by the management authorities or other appropriate and technically qualified entities.

#### 60 Scoring Guidepost

- Research provides for the collection of catch statistical and biological data for the target species.
- There has been useful research on the impact of fishing on target and non-target species taken in the fishery, and on the ecosystem in general.

**Indicator 3.2.2:** Research results are available in a timely fashion to interested parties, and there is a mechanism for periodic review of the content, scope and results of the research plan.

#### 100 Scoring Guidepost

- There is a formal and codified arrangement for annual stakeholder review of the content and scope of research plans and results, including matters related to its funding, which is open and transparent.

- There is a formal and codified arrangement for peer review of ongoing research
- The management system regularly incorporates into the research plan recommendations emanating from these reviews.
- Research results are made available to all interested stakeholders on a regular basis and in a timely manner.

#### 80 Scoring Guidepost

- The management system provides for periodic reviews by stakeholders in the fishery, of the content and scope of research, including funding requirements.
- There are periodic peer reviews of ongoing research.
- Inputs from these reviews are used by the management system to modify research plans.
- Research results are available to interested parties on a regular basis.

#### 60 Scoring Guidepost

- While there are no formal arrangements for stakeholder research review, such reviews are held on a periodic basis for the majority of the research plans and/or results.
- While there are no formal arrangements for peer review of ongoing research, such reviews are periodically conducted for the majority of ongoing research plans and/or results.
- The majority of research results are available to interested parties.

### [MSC Criterion 3.3](#)

The management system allows for transparency with respect to its operational details, including a consultative process that provides for the incorporation of information and data from stakeholders in the fishery related to matters of a social, cultural, economic and scientific nature.

The objective here is to evaluate whether the management system is open and transparent with respect to all interested parties and whether the views of stakeholders are considered in formulating management strategies.

**Indicator 3.3.1:** Provides for a consultative process that is open to all interested and affected stakeholders, which allows for their input on a regular basis into the management process.

## 100 Scoring Guidepost

- The management system provides a formal arrangement for the direct participation of all interested and affected stakeholders from both the public and private sectors, on matters of a social, cultural, economic and scientific nature.
- The management system provides timely, advanced notice of meetings at which there can be stakeholder participation.
- The management system does not exclude any interested and affected stakeholder from the consultative process.
- The management system addresses the interests of all interested and affected stakeholders.

## 80 Scoring Guidepost

- The management system provides for the regular participation of most interested and affected stakeholders on matters of a social, cultural, economic and scientific nature.
- The management system generally provides notice of meetings at which there can be stakeholder participation.
- The management system does not usually exclude involvement of any interested and affected stakeholder.
- The views of most interested and affected stakeholders are regularly considered in the formulation of management strategies.

## 60 Scoring Guidepost

- The majority of interested and affected stakeholders are provided with a forum for input into the formulation of management plans and measures.

### MSC Criterion 3.4

The management system implements measures to control levels of exploitation in the fishery.

*Sub-Criterion 3.4.1: The management system has provisions for controlling levels of exploitation to achieve the escapement and/or harvest rate goals for target stocks, and for setting harvest limits for non-target species, when there is information indicating such limits are necessary.*

Under this sub-criterion the management system is evaluated to determine whether it provides for mechanisms to ensure that objectives related to exploitation levels and escapement are

achieved. These mechanisms for controlling fisheries include closed areas, no take zones, and closed dates and times.

**Indicator 3.4.1.1:** Utilizes methods to limit or close fisheries in order to achieve harvest and/or escapement goals, including the establishment of closed areas, no-take zones, and closed dates and times when appropriate.

#### 100 Scoring Guidepost

- The management system provides a formal and codified system to achieve harvest and/or escapement goals for target stock units and, as appropriate, non-target species of fish.
- The management system provides a formal and codified mechanism for establishing closed areas, no-take zones, and closed dates and times for any areas of the fishery.
- Management sets exploitation and escapement levels designed to maintain the target stock units at levels of abundance that can sustain high productivity.
- There is no evidence provided by the management system to indicate that, as a result of fishing, target stock units are in serious decline or degradation of the ecosystem is occurring.
- Measures are currently implemented to achieve these objectives.

#### 80 Scoring Guidepost

- Harvest rates and/or escapement levels designed to achieve target goals are regularly implemented.
- The management system provides for the establishment of closed areas, no-take zones and closed dates and times.
- Controls are set to maintain or restore target species to high productivity levels, and in a manner that does not contribute significantly to ecosystem degradation.
- Measures that limit harvest rates and set escapement goals are implemented when necessary.

#### 60 Scoring Guidepost

- Harvest rates and/or escapement goals for the majority of the target stocks are effective in halting declines in stock abundance caused by the fishery.
- Established harvest and/or escapement goals for target stocks consider the impact of the fishery on the majority of the non-target species, and on the ecosystem generally.

**Indicator 3.4.1.2:** Provides for restoring depleted target species to specified levels within specified time frames.

#### 100 Scoring Guidepost

- The management system has a formal and codified mechanism, which is adequate for restoring depleted target stocks to the TRP or equivalent high level of abundance, as qualified by relevant environmental factors.
- The mechanism includes strict guidelines for restoring these depleted populations within a certain time frame are formalized by the management system.

#### 80 Scoring Guidepost

- The management system includes measures, which are adequate to restore depleted populations of target stock to the TRP or equivalent high level of abundance as qualified by relevant environmental factors.
- A time schedule for restoration, which considers environmental variability, is determined by the management system.

#### 60 Scoring Guidepost

- The management system includes measures for restoring the majority of depleted populations of target stock to the TRP or equivalent high level of abundance.

*Sub-Criterion 3.4.2: The management system incorporates measures to ensure that its objectives regarding the conservation of the stocks under its purview and the impact of the fishery on the ecosystem are carried out.*

Two major issues are dealt with under this topic. One examines whether the management system includes provisions to determine whether there is adequate enforcement of the measures established for achieving the objectives of management. In these evaluations, compliance is considered to be the result of adequate enforcement mechanisms by the management system and education with respect to providing clear and timely information to the fishing industry regarding such measures. The other examines whether the management system includes adequate monitoring of the fishery so as to evaluate the performance of the fishery with regard to the policies and objectives of management.

**Indicator 3.4.2.1:** The management system includes compliance provisions.

#### 100 Scoring Guidepost

- The management system provides for a formal arrangement, such as a compliance committee or a staff review team on compliance, to review the effectiveness of enforcement.

- Education and enforcement procedures are implemented and applicable rules are consistently applied.
- Enforcement actions are effective in achieving the objectives of management.
- There are no infractions being consistently committed in the fishery.

#### 80 Scoring Guidepost

- The management system includes compliance provisions that are effective for the fisheries.
- Infractions, which result in adverse impacts on the status of the stocks or on the ecosystem, are rare.

#### 60 Scoring Guidepost

- The management system includes compliance provisions that are effective for the majority of the fisheries.

#### Indicator 3.4.2.2 The management system includes monitoring provisions.

#### 100 Scoring Guidepost

- The management system incorporates a formal, effective program for monitoring the fishery, which fully evaluates the performance in terms of whether the regulations are resulting in the intended harvest rates and/or escapements, and achievement of objectives regarding impacts on the ecosystem caused by the fishery.
- Monitoring is comprehensive, and includes all relevant components of the fishery
- Results are reported widely on a regular and timely basis.

#### 80 Scoring Guidepost

- The management system incorporates an effective monitoring program, which evaluates the performance of the fishery relative to management goals and policies.
- Monitoring is broad in scope, and results are available to the majority of the stakeholders.

#### 60 Scoring Guidepost

- The management system includes provisions for a monitoring program to evaluate the performance of the majority of the fisheries against its policies and objectives.

### MSC Criterion 3.5

The management system provides for regular and timely review and evaluation of its performance, and for appropriate adjustments based on the findings of these reviews and evaluations that are consistent with the objectives of the program.

The objective under this criterion is to evaluate whether the management system has an effective mechanism for reviewing performance vis-à-vis the objectives and policies of the management programs. An effective mechanism would include both internal and external reviews, and, when appropriate, the recommendations from the reviews would be incorporated into the management of the fishery. Also, the issue of whether the management system provides a mechanism for resolving disputes emanating from such reviews, or any other sources, is evaluated.

**Indicator 3.5.1:**        **There is an effective and timely system for internal review of the management system.**

#### 100 Scoring Guidepost

- The management system provides for continuing internal review that is broad in scope, effective, and timely.
- The review process and results are made available to all stakeholders.

#### 80 Scoring Guidepost

- The management system includes provision for an internal review that is conducted periodically as the need arises.
- The results of the review are made available to interested stakeholders.

#### 60 Scoring Guidepost

- The management system provides for internal review of its performance, and when available, review results are made available to the majority of interested stakeholders.

**Indicator 3.5.2:**        **There is an effective and timely system for external review of the management system.**

#### 100 Scoring Guidepost

- The management system provides for one or more independent experts to review at least bi-annually all of the important components of management performance.
- The format and standards of the review are established with input from outside the management system.

- Provision is made for making public the review results.

#### 80 Scoring Guidepost

- The management system provides for a review of management performance by one or more independent experts at least once every five years.
- The format and standards of the review are established within the management system.
- Review results are made available to the public.

#### 60 Scoring Guidepost

- The management system is open to external review at least once every 10 years.

**Indicator 3.5.3:**        **There is a mechanism for incorporating into the management system recommendations resulting from the review process.**

#### 100 Scoring Guidepost

- The recommendations from internal and external reviews are always acted upon and, where appropriate, incorporated into the management system.
- The management system provides for a report to all interested stakeholders describing how it acted on the recommendations of these reviews.

#### 80 Scoring Guidepost

- The recommendations from internal and external reviews are usually, but not always, used to make changes to the management system.

#### 60 Scoring Guidepost

- Recommendations from internal and external reviews are considered by the management system and an explanation is provided for the actions or lack of action associated with the majority of these recommendations.

**Indicator 3.5.4:**        **There is an appropriate mechanism for resolving disputes.**

#### 100 Scoring Guidepost

- The management system has formal and codified mechanisms for resolution of disputes arising as a result of the fishery.

- Affected parties routinely use the dispute resolution mechanism.
- The dispute resolution mechanism is unbiased and fair respecting all disputing parties.

#### 80 Scoring Guidepost

- The management system has a dispute-resolution process for resolving significant disputes.
- The dispute resolution mechanism is available for use by affected parties, but is not routinely used.
- The dispute resolution mechanism does not discriminate against any disputing party.

#### 60 Scoring Guidepost

- There is a mechanism for resolving disputes that is provided for by the management system.

### MSC Criterion 3.6

The management system provides for the operation of the fishery to be in compliance with all relevant legal and administrative requirements.

In this section we attempt to evaluate the management system with regard to whether it manages the fishery in a manner that is consistent with commitments under relevant international treaties and agreements, and with domestic laws and regulations that pertain to the fishery. In this context we also evaluate whether the management system is in conformity with the legal and customary Tribal rights as established by treaties and other applicable instruments.

**Indicator 3.6.1: The fishery is not operated in a unilateral manner in contravention to international agreements.**

*For the purposes of this Indicator, only treaties and conventions which the government has signed, ratified or otherwise is a High Contracting Party to, shall apply.*

#### 100 Scoring Guidepost

- When the stocks of fish under the authority of the management system are also under the authority of an international treaty, the obligations are respected, and actions by the management system are coordinated with the recommendations of the treaty organization.
- All measures taken within the management system are in compliance with relevant international treaty obligations.

- The management system does not undertake unilateral exemption from any treaty obligation pertaining to the fishery.

#### 80 Scoring Guidepost

- The management system does not willingly act in contravention to any international treaty obligations pertaining to the fishery.
- The management system does not knowingly undertake unilateral exemption from any treaty obligation pertaining to the fishery.
- Evidence indicates any inadvertent action with regard to the contravention of any international treaty obligations by the management system is rare.

#### 60 Scoring Guidepost

- The management system is in compliance with the majority of international treaty recommendations dealing with the fishery.

**Indicator 3.6.2:**        **The fishery is carried out in a manner consistent with all relevant domestic laws and regulations relevant to the fishery.**

#### 100 Scoring Guidepost

- The management system conducts annual assessments of the fisheries compliance with relevant domestic laws and regulations, and these assessments have confirmed full compliance with these laws and regulations.

#### 80 Scoring Guidepost

- The management system conducts at least bi-annual assessments of the fisheries compliance with relevant domestic laws and regulations, and these assessments have confirmed that none of the violations that have occurred would result in failure to achieve the objectives of the management plan.

#### 60 Scoring Guidepost

- The management system conducts periodic assessments of the fisheries compliance with relevant domestic laws and regulations, and these assessments have not identified any violations that would result in failure to achieve the objectives of the management plan.

**Indicator 3.6.3:**        **The management system provides for the observation of legal and customary Tribal rights.**

#### 100 Scoring Guidepost

- The management system is in compliance with all major legal and customary Tribal rights that are impacted by the fishery.
- The management system includes processes for Tribal consultation on the impact of the commercial fishery on their food, social and ceremonial fisheries.

#### 80 Scoring Guidepost

- The management system is found to be in compliance with all legal and most of the customary Tribal rights that are impacted by the fishery.
- The management system includes processes for providing information to Tribes on the major impacts of the commercial fishery on their food, social and ceremonial fisheries.

#### 60 Scoring Guidepost

- The management system is in compliance with Tribal legal rights that are impacted by the fishery.

### Fishery Operations Criteria

#### MSC Criterion 3.7

Fishing operations make use of gear and fishing practices that limit ecosystem impacts.

The intention regarding this criterion relating to fishery operations is to evaluate the degree to which the management system is capable of implementing responsible fishing practices. The understanding here regarding responsible fishing practices refers to the criteria defined in the MSC, Principle 3.B., Operational Criteria 12-17, and with those sections of the FAO Code of Conduct for Responsible fishing dealing with the conduct of fishing practices by the fishing industry.

**Indicator 3.7.1: Utilization of gear and fishing practices that minimize both the catch of non-target species, and the mortality of this catch.**

#### 100 Scoring Guidepost

- There are requirements in the management system to reduce the capture of non-target species, which include:
  - Controlling the use of gear types and fishing practices that result in significant catches of non-target species or undersized individuals of target species, and/or
  - Implementing closed seasons and no-fishing zones during times and in areas where the probability of making significant catches of non-target species or undersized individuals of target species is high, and

- Holding education programs for the fishing industry and other relevant stakeholders to make them aware of the benefits of using fishing techniques and gear that minimize the catch of non-target species or undersized individuals of target species.
- Taking into consideration natural variability in population abundance and the possibility of declining abundance resulting from heavy exploitation, the management system can demonstrate the effective use of these methods by fishers by the existence of downward trends in the catches of non-target species.
- The management system creates incentives to decrease the catch of non-target species (e.g. by providing more fishing time for vessels achieving certain standards for reducing such catches).

#### 80 Scoring Guidepost

- Through educational programs for members of the fishing industry and other relevant stakeholders, the management system discourages the use of gear types and fishing practices that result in high catches of non-target species or undersized individuals of target species, and encourages them to avoid fishing in areas identified to have high concentrations of non-target species or undersized individuals of target species.
- Taking into consideration natural variability in population abundance, there is evidence that the capture and discard of non-target species or undersized individuals of target species is trending downward, or is at a level of exploitation that has been determined by management to be acceptable.
- Fishers generally conduct their fishing activity in a manner that is consistent with the goal of reducing the catch of non-target species or undersized individuals of target species.

#### 60 Scoring Guidepost

- The majority of fisheries are conducted in a manner that is consistent with the goal of reducing the catch of non-target species or undersized individuals of target species.

**Indicator 3.7.2:** Prohibits the use destructive fishing practices, such as poisons and explosives.

#### 100 Scoring Guidepost

- The management system prohibits fishing practices that utilize poisons or explosives, or other such devices that damage or destroy physical, chemical, and/or biological features or characteristics of the areas where such practices are prosecuted.
- Evidence can be provided by the management system that such destructive practices are not currently being employed in the fishery.

#### 80 Scoring Guidepost

- The management system can demonstrate that destructive fishing practices, such as poisons or explosives, are not currently being used in the fishery.

#### 60 Scoring Guidepost

- The management system prohibits or discourages the use of destructive fishing practices.

**Indicator 3.7.3:**        **Minimizes operational waste such as lost fishing gear, oil spills, on-board spoilage of catch, etc.**

#### 100 Scoring Guidepost

- The management system has a formal program to reduce operational waste in the fishery, with the long-term goal of eliminating such waste.
- The program is effective, as reflected by reduced incidents of operational waste.
- The management system has a formal program in which they work with the fishing industry and other relevant stakeholders to promote the proper handling of catch.

#### 80 Scoring Guidepost

- The management system has a program that sets guidelines for reducing operational waste.
- The management system encourages the fishing industry and other relevant stakeholders to promote programs for the proper handling of catch.

#### 60 Scoring Guidepost

- There is a program to reduce operational waste.

**Indicator 3.7.4:**        **The management system solicits the cooperation of the fishing industry and other relevant stakeholders in the collection of data on the catch and discard of non-target species and undersized individuals of target species.**

#### 100 Scoring Guidepost

- The majority of fish harvesters and processors are in compliance with management requests for the collection of data on catches and discards of non-target species and undersized individuals of target species.
- Continued improvement in the quality and quantity of catch and discard data is evident.

#### 80 Scoring Guidepost

- Sufficient numbers of fish harvesters and processors comply with requests for data on catches and discards of non-target species and undersized individuals of target species to ensure that reliable estimates of total catches and discards for the fishery can be obtained.

#### 60 Scoring Guidepost

- Catch and discard data provided by the fishing industry and other relevant stakeholders are sufficient to manage the harvests from the majority of the non-target species and undersized individuals from the majority of the target species.

**Indicator 3.7.5:**        **Implements fishing methods that minimize adverse impacts on habitat, especially in critical zones.**

#### 100 Scoring Guidepost

- The management system has a formal program to identify and document the impact of the fishery on habitat, and implements measures to restrict gear and fishing practices that have been shown to adversely affect habitat.
- The crews of fishing vessels comply with such measures and thereby avoid damaging the habitat.
- There is no evidence of continued impacts of fishing on habitat.

#### 80 Scoring Guidepost

- The management system undertakes measures to identify and document the impact of the fishery on habitat and to set guidelines for reducing habitat impacts.
- Fish harvesters are encouraged to follow the guidelines for reducing habitat impacts.

#### 60 Scoring Guidepost

- The management system has a program for assessing the impact of the fishery on habitat, and for making fishers aware of suitable fishing gear and practices that are known to reduce adverse impacts on habitat.